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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/761,626

01/22/2004

Meng-An Pan

58268.00346

3538

32294 7590 05/16/2008  
SQUIRE, SANDERS & DEMPSEY L.L.P.  
8000 TOWERS CRESCENT DRIVE  
14TH FLOOR  
VIENNA, VA 22182-6212

EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

05/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed April 18, 2008 have been fully considered but they are not persuasive.

#### *Applicant's Argument(s):*

Regarding claims 1, 10, and 11, pages 8-9, the applicant argues "Pikkarainen only mentions 1<sup>st</sup> or 5<sup>th</sup> order delta sigma modulation. The Office Action, however, concluded that it would have been obvious to a person of ordinary skill in the art to modify Pikkarainen to utilize 2<sup>nd</sup> order delta sigma modulation because using a higher order delta sigma modulation will result in higher signal to noise ratio (see Office Action, page 5). Applicants respectfully disagree with this conclusion. As noted by the Office Action, Pikkarainen discloses "a fifth-order noise shaper" (Pikkarainen, Column 5, lines 27-28 and Fig. 6). Thus, according to the Office Action's rationale, a person of ordinary skill in the art would be motivated to use a higher order delta sigma modulator which will result in a higher signal to noise ratio. As such, an individual of ordinary skill in the art would be motivated to use a delta sigma modulator of a higher order than the 5<sup>th</sup> order modulator disclosed in Pikkarainen. One of ordinary skill in the art would not be motivated to modify Pikkarainen to utilize 2<sup>nd</sup> order delta sigma modulation. Furthermore, Applicants respectfully submit that it is unclear whether the system of Pikkarainen would be suitable for 2<sup>nd</sup> order delta sigma modulation."

Regarding claim 11, page 9, the applicant argues "Pikkarainen does not disclose or suggest an "RF transmitter", as recited in claim 11 ... Pikkarainen does not

contemplate the use of a transmitter or the conversion of the analog signal to an RF signal.”

*Examiner's Response:*

Regarding the first argument set forth above, the examiner disagrees with the applicant because it seems like the applicant **ignored** the assumption that has been made by the examiner (e.g. considering Pikkarainen employs a 1<sup>st</sup> order delta sigma modulator and being motivated to use a 2<sup>nd</sup> order delta sigma modulator instead see page 5 of the final office action dated February 19, 2008). One of ordinary skill in the art would recognize that such a limitation is merely a matter of design choice.

Regarding the second argument set forth above, the examiner still (see the final office action dated February 19, 2008) disagrees with the applicant because Pikkarainen discloses using the disclosed modulation method and/ or apparatus in mobile phones **transmitting at radio frequency** (col. 1, lines 13-18; col. 4, lines 7-8). In addition, as responded in the final office action dated February 19, 2008, one of ordinary skill in the art would recognize that it is extremely well known in the art to up convert a signal to radio frequency by employing a mixer.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRESHTEH N. AGHDAM whose telephone number is (571)272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Freshteh N Aghdam/

Examiner, Art Unit 2611

/CHIEH M FAN/

Supervisory Patent Examiner, Art Unit 2611